 Basis of the rep 	ιοπ	
--------------------------------------	-----	--

•	the and	receiving Office in	response to an invitation under .	Article 14 are referred to in this report as "contain amendments (Rules 70.16 and 70.1	originally filed"		
	1,3	-32	as originally filed				
	2,2	a	with telefax of	28/02/2001			
	Cla	ims, No.:					
	1-7	4	with telefax of	28/02/2001			
	Dra	awings, sheets:					
	1/3	-3/3	as originally filed				
2.				above were available or furnished to this A d, unless otherwise indicated under this ite			
	The	ese elements were a	available or furnished to this Autl	hority in the following language: , which is	s:		
		the language of a	translation furnished for the purp	ooses of the international search (under Ru	ıle 23.1(b)).		
		the language of pu	ublication of the international app	olication (under Rule 48.3(b)).			
	the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).						
3.	3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:						
		contained in the in	ternational application in written	form.			
		filed together with	the international application in co	omputer readable form.			
		furnished subsequ	ently to this Authority in written f	orm.			
		furnished subsequ	ently to this Authority in compute	er readable form.			
			t the subsequently furnished writ oplication as filed has been furni	tten sequence listing does not go beyond t shed.	he disclosure in		
		The statement that listing has been full		nputer readable form is identical to the writ	ten sequence		
4.	The	amendments have	resulted in the cancellation of:				

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/04786

		the description,	pages:			
		the claims,	Nos.:			
		the drawings,	sheets:			
5.	. This report has been established as if (some of) the amendments had not been made, since they have considered to go beyond the disclosure as filed (Rule 70.2(c)):					
		(Any replacement sh report.)	eet containing such amendments must be referred to under item 1 and annexed to this			

- 6. Additional observations, if necessary:
- V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- 1. Statement

Novelty (N) Yes: Claims

No: Claims 1-5, 29, 31, 32, 43, 46, 50, 51, 60-63, 65-71, 74

Inventive step (IS) Yes: Claims

No: Claims 1-74

Industrial applicability (IA) Yes: Claims 1-74

No: Claims

2. Citations and explanations see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted: see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made: see separate sheet

R Item VIII

Certain observations on the international application

- 1. The application does not meet the requirements of Article 6 PCT, because claims 1, 7, 9, 29, 32, 43, 46, 50, 65-67 and 74 are not clear.
- 1.1. Although the product claims 1, 29, 65, 66 and 74 (group I), and the process claims 32, 43, 46, 50 and 67 (group II) have been drafted as separate independent claims, they appear to relate within each single group effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness.

Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

In order to overcome this objection, it would appear appropriate to file an amended set of claims defining the relevant subject-matter in terms of a minimum number of independent claims in each category followed by dependent claims covering features which are merely optional (Rule 6.4 PCT). In this case one claim per category would seem appropriate.

- 1.2. Claims 29 and 74 comprise all the features of claim 1 and are therefore not appropriately formulated as a claim dependent on the latter (Rule 6.4 PCT).
- 1.3. The term "about" used in claims 29 and 74 is vague and indefinite and, as such, renders the claim unclear (Article 6 PCT). This defect requires amendment of the claim in order to render the features concerned unequivocal.
- 1.4. It is clear from D3 (cf. page 1371, column 3, bottom: "hanging downwards") that the term 'pendant' is closely associated with a direction, i.e. it concerns the gravitational force acting upon matter. For any groups branching off from a polymer backbone, such as cationic groups, a direction could only indicate their position with respect to the whole or a part of the molecule they are bonded to, but

not in the sense detailed above.

Hence is the term 'pendant' not appropriately used in present claims 1, 7, 9, 32, 43, 46 and 50. In other words: said term is not suitable to delimit the subjectmatter of claims 1, 7, 9, 32, 43, 46 and 50 from the prior art and, as such, is unclear.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventiv step or industrial applicability; citations and explanations supporting such statement

- 1. Reference is made to the following documents:
 - D1: US-A-4 473 474 (AMF INC.) 25 September 1984 (1984-09-25)
 - D2: US-A-4 601 828 (YALE UNIVERSITY) 22 July 1986 (1986-07-22)
 - D3: Oxford Dictionary; Oxford University Press 1998 (cf. page 1371); attached to this communication
- In so far as what can be understood from the claims (but see point VIII above): 2. The present application does not satisfy the criterion set forth in Article 33 (2) PCT because the subject-matter of claims 1-5, 29, 31, 32, 43, 46, 50, 51, 60-63, 65-71 and 74 is not new as defined in the regulations (Rule 64 (1)-(3) PCT).
- 2.1. Document D1 (for citations see the International Search Report and col. 10, line 13 to col. 11, line 31), discloses
 - a) a positively charged microporous membrane comprising a hydrophilic porous substrate and a cross linked coating having pendant cationic groups and
 - b) a process for its preparation which forms a novelty bar for the process as disclosed by present claims 32, 43, 46, 50 and 67.
 - It is clear from said process that the charge modifying agents are indeed fixed to a coating (cf. col. 10, lines 25-36).
- 2.2. Insofar the term 'pendant' can be understood (see point VIII, 1.4 above) it is clear that the term "bonded" of D1 (cf. column 10, lines 25-31) and of D2 (cf. column

- **EXAMINATION REPORT SEPARATE SHEET**
 - 11, lines 27-34) embraces 'pendant' groups (see as well D1: column 12, lines 1-10; D2: column 12, lines 7-17).
- 2.3. The cross linked polyamides used include polyalkyleneamine and diallylamine copolymers (cf. col. 10, line 59 to col. 11, line 27; col. 21. lines 53-60). The microporous membrane of D1 is used in processes to remove the same biomolecules as exemplified in present claims 68-71 (cf. col 6, lines 8-25, col. 18, line 20 to col. 19, line 24).
- 2.4. It is an established physical principle that the same materials treated by the same process lead to the same products with identical technical properties. In accordance with this principle and taking into account the teachings of D1 and the present application one would expect the membranes as disclosed by the present application and D1 to have the same properties including the protein- and nucleic acid binding capacity (cf. present claims 29 and 74).
- 2.5. Thus, as D1 discloses all the technical features defined by the subject-matter of claim 1-5, 29, 31, 32, 43, 46, 50, 51, 60-63, 65-71 and 74 of the present application, said subject-matter is not new in respect of prior art as defined in the regulations (Rule 64(1)-(3) PCT).
- 2.6. The applicant's attention is further drawn to the fact that document D2 (cf. col. 8, line 34 to col. 9, line 25; col. 9, lines 46-51; col. 10, lines 14-37; col. 11, lines 27-58; col. 13, line 34 to col. 14, line 23; examples), independently from D1, forms a novelty bar for the subject-matter of the same claims 1-5, 29, 31, 32, 43, 46, 50, 51, 60-63, 65-71 and 74 of the present application.
- 2.7. Presently it seems that dependent claims 6-28, 30, 33-42, 44, 45, 47-49, 53-59, 64, 72 and 73 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.

R Item VII

Certain defects in the international application

- 1. The amendments filed with the International Bureau under Article 19(1) introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 19(2) PCT. The amendment concerned is the following: "or absorb" (claim 67).
- 2. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 and D2 is not mentioned in the description, nor is this document identified therein.

From the INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

JAY, Jeremy M. LEYDIG, VOIT & MAYER Ltd. 700 Thirteenth Street, N.W. Suite 300 Washington, D.C. 20005

ETATS-UNIS D'AMERIQUE

17:9

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing (day/month/year)

10.05.2001

25/02/1999

Applicant's or agent's file reference 440201/PALL

International application No.

PCT/US00/04786

International filing date (day/month/year)

25/02/2000

Priority date (day/month/year)

IMPORTANT NOTIFICATION

Applicant

PALL CORPORATION et al.

- 1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
- 2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
- 3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

European Patent Office D-80298 Munich

Tel. +49 89 2399 - 0 Tx: 523656 epmu d

Fax: +49 89 2399 - 4465

Authorized officer

Fuerbass, C

Tel.+49 89 2399-8132



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicanta	25.000	nt's file reference						
''	-	ent's file reference	FOR FURTHER AC		fication of Transmittal of International ary Examination Report (Form PCT/IPEA/416)			
440201/P			International Sline data /		Priority date (day/month/year)			
International PCT/US0	• •		International filing date (c 25/02/2000	iay/IIIOIIIIV y ear)	25/02/1999			
				<u> </u>	25/52/1555			
	International Patent Classification (IPC) or national classification and IPC B01D67/00							
Applicant	-							
PALL CO	RPC	PRATION et al.						
1. This in	terna	ational preliminary exami smitted to the applicant a	ination report has been according to Article 36.	prepared by this In	nternational Preliminary Examining Authority			
			Ü					
2. This R	EPO	RT consists of a total of	7 sheets, including this	cover sheet.	·			
be	en a	mended and are the bas	sis for this report and/or	sheets containing	ion, claims and/or drawings which have rectifications made before this Authority			
(s	ee R	ule 70.16 and Section 60	77 of the Administrative	Instructions under	the PCT).			
These	anne	exes consist of a total of	13 sheets.					
				· · · · · · · · · · · · · · · · · · ·				
0 7.		nambalna indiastiana sala	ting to the following item	ne•				
3. This re	eport	contains indications rela	ung to the following item	113.				
1	×	Basis of the report						
11		Priority			-			
111				velty, inventive ste	p and industrial applicability			
IV		Lack of unity of invention						
V	×	Reasoned statement un citations and explanation	nder Article 35(2) with re ons suporting such state	egard to novelty, in ement	ventive step or industrial applicability;			
VI		Certain documents cite						
`VII	X	Certain defects in the ir						
Alii	\boxtimes	Certain observations or	n the international applic	cation				
Date of sub	Date of submission of the demand				of this report			
05/09/200	00			10.05.2001				
		g address of the international	ો	Authorized officer	AND SON MONEY			
preliminary		Ining authority: opean Patent Office						
011	D-80	0298 Munich	od	Luethe, H				
<u> </u>		+49 89 2399 - 0 Tx: 523650 : +49 89 2399 - 4465	6 epmu d	Telephone No. ±49	89 2399 7519			

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

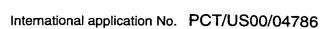
International application No. PCT/US00/04786

I.	Bas	is i	f th	r p	rt									
1.	the and	rece	iving not a	Offi anne	ce in xed	response t	o an invitat	tion under.	ation (Repla Article 14 ar ontain amen	e referre	d to in this	report a	s "origina	nished to ally filed"
	1,3-	32				as origina	ally filed							
	2,28	a				with telefa	ax of		28/02/2001	I				
	Cla	ims,	No.											
	1-74	4				with telefa	ax of		28/02/2001	I				
	Dra	wing	js, s	heet	s:									
	1/3-	3/3				as origina	ally filed							
2.	With	n reg guag	ard :	o the	e lan	guage, all to internation	the element al applicati	ts marked on was file	above were ed, unless ot	availabl herwise	e or furnish indicated u	ed to thi	is Authori s item.	ity in the
	The	se e	leme	ents v	vere	available o	r furnished	to this Au	thority in the	followin	g language	: , whic	ch is:	
		the	lang	uage	of a	a translation	furnished	for the pur	poses of the	internat	ional searc	h (unde	r Rule 23	3.1(b)).
		the	lang	uage	of p	oublication o	of the intern	national ap	plication (un	der Rule	48.3(b)).			•
	the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).						ınder Rule							
3.	. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:							, the						
		con	taine	ed in	the i	nternationa	l application	n in writter	form.					
		filed	l tog	ethe	with	n the interna	ational appl	lication in o	computer rea	adable fo	rm.			
			_			uently to th								•
						· .			ter readable	form.				
		The	sta	eme	nt th	-	equently fu	rnished w	itten sequer		g does not	go beyo	nd the dis	sclosure in

☐ The statement that the information recorded in computer readable form is identical to the written sequence

4. The amendments have resulted in the cancellation of:

listing has been furnished.





		the description,	pages:					
		the claims,	Nos.:					
		the drawings,	sheets:					
5.		This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):						
		(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)						
6.	Add	ditional observations	, if necessary:					

- V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- 1. Statement

Novelty (N)

Yes: No:

Claims

Claims 1-5, 29, 31, 32, 43, 46, 50, 51, 60-63, 65-71, 74

Inventive step (IS)

Claims Yes:

Claims 1-74 No:

Industrial applicability (IA)

Claims 1-74 Yes:

No: Claims

- 2. Citations and explanations
 - s e separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted: se separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

se separate sheet

R Item VIII

C rtain observations on the international application

- 1. The application does not meet the requirements of Article 6 PCT, because claims 1, 7, 9, 29, 32, 43, 46, 50, 65-67 and 74 are not clear.
- 1.1. Although the product claims 1, 29, 65, 66 and 74 (group I), and the process claims 32, 43, 46, 50 and 67 (group II) have been drafted as separate independent claims, they appear to relate within each single group effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness.

Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

In order to overcome this objection, it would appear appropriate to file an amended set of claims defining the relevant subject-matter in terms of a minimum number of independent claims in each category followed by dependent claims covering features which are merely optional (Rule 6.4 PCT). In this case **one** claim per category would seem appropriate.

- 1.2. Claims 29 and 74 comprise all the features of claim 1 and are therefore not appropriately formulated as a claim dependent on the latter (Rule 6.4 PCT).
- 1.3. The term "about" used in claims 29 and 74 is vague and indefinite and, as such, renders the claim unclear (Article 6 PCT). This defect requires amendment of the claim in order to render the features concerned unequivocal.
- 1.4. It is clear from D3 (cf. page 1371, column 3, bottom: "hanging downwards") that the term 'pendant' is closely associated with a direction, i.e. it concerns the gravitational force acting upon matter. For any groups branching off from a polymer backbone, such as cationic groups, a direction could only indicate their position with respect to the whole or a part of the molecule they are bonded to, but

Inc. anal Application No PCT/US 00/04786

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B01D67/00 B01D61/14 B01D71/56								
According to International Patent Classification (IPC) or to both national classification and IPC								
	SEARCHED							
Minimum do IPC 7	Minimum documentation searched (classification system followed by classification symbols)							
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched								
	Electronic data base consulted during the international search (name of data base and, where practical, search terms used)							
	ENTS CONSIDERED TO BE RELEVANT		Г					
Category *	Citation of document, with indication, where appropriate, of the re	levant passages	Relevant to claim No.					
X	US 4 473 474 A (AMF INC.) 25 September 1984 (1984-09-25) column 13, line 11 -column 14, licolumn 15, line 57 -column 16, licolumn 21, line 53 -column 22, liclaims 1-13	ine 25	1-74					
X	US 5 151 189 A (GELMAN SCIENCES, INC.) 29 September 1992 (1992-09-29) column 3, line 32 -column 4, line 26 column 5, line 34 -column 6, line 19 column 6, line 60 - line 63 claims 1-38							
A	US 4 601 828 A (YALE UNIVERSITY) 22 July 1986 (1986-07-22) the whole document		1-74					
Furth	ner documents are listed in the continuation of box C.	X Patent family members are listed	in annex.					
° Special car	tegories of cited documents :	"T" later document published after the inte	mational filipo date					
	nt defining the general state of the art which is not	or priority date and not in conflict with cited to understand the principle or the	the application but					
"E" earlier d	ered to be of particular relevance locument but published on or after the international	invention "X" document of particular relevance; the c	laimed invention					
	nt which may throw doubts on priority claim(s) or	cannot be considered novel or cannot involve an inventive step when the do	be considered to					
	which is cited to establish the publication date of another citation or other special reason (as specified) "Y" document of particular relevance; the claimed inventive step when the considered to involve an inventive step when the							
	*O" document referring to an oral disclosure, use, exhibition or other means cannot be considered to involve an inventive step when the document is combined with one or more other such document entering to an oral disclosure, use, exhibition or other means ments, such combination being obvious to a person skilled							
	nt published prior to the international filing date but an the priority date claimed	in the art. *&" document member of the same patent	family					
Date of the a	actual completion of the international search	Date of mailing of the international sec	arch report					
6	June 2000	14/06/2000						
Name and m	nailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2	Authorized officer						
	NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,	144.						
	Fax: (+31-70) 340-3016	Luethe, H						



information on patent family members

Inter anal Application No PCT/US 00/04786

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 4473474	A	25-09-1984	AU	7678081	Α	06-05-1982
			BR	8108849	Α	21-09-1982
			CA	1156410	Α	08-11-1983
			DE	3168195	D	21-02-1985
			EP	0050864	Α	05-05-1982
			ΙE	51844	В	15-04-1987
			JP	57501855	T	14-10-1982
			JP	63032093	В	28-06-1988
			MX	156009	Α	15-06-1988
			WO	8201477	Α	13-05-1982
			US	4708803	Α	24-11-1987
			US	4673504	Α	16-06-1987
			บร	4711793	Α	08-12-1987
US 5151189	Α	29-09-1992	AT	122920	T	15-06-1995
			AU	8713591		15-04-1992
			CA	2092708		18-03-1992
			DE	69110049	D	29-06-1995
			DE	69110049	T	18-01-1996
			EP	0549706	Α	07-07-1993
			JP	6501199	Ţ	10-02-1994
			WO		A	02-04-1992
			US	5269931	A	14-12-1993
US 4601828	Α	22-07-1986	US	4512896		23-04-1985
			AU	577276		22-09-1988
			AU	2497884		30-08-1984
			CA	1207737		15-07-1986
			DE	3486231	D	25-11-1993
			DE	3486231	Ţ	14-04-1994
			DE	3486313	_	07-07-1994
			DE	3486313	Ţ	10-11-1994
			EP	0138841	A	02-05-1985
			EP	0343387		29-11-1989
			FR	2540629	A	10-08-1984
			IL	70866		16-09-1987
			JP	3076868	В	06-12-1991
			JP	60501126	Ţ	18-07-1985
			WO	8403055	A	16-08-1984

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain .	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
ΑT	Austria	FR	France	LU	Luxembourg	SN	Senegal
ΑU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	ТJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	zw	Zimbabwe
CI	Côte d'Ivoire ·	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		•
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU PCT **Assistant Commissioner for Patents NOTIFICATION OF ELECTION United States Patent and Trademark** (PCT Rule 61.2) Office **Box PCT** Washington, D.C.20231 **ETATS-UNIS D'AMERIQUE** Date of mailing (day/month/year) in its capacity as elected Office 06 October 2000 (06.10.00) International application No. Applicant's or agent's file reference PCT/US00/04786 440201/PALL International filing date (day/month/year) Priority date (day/month/year) 25 February 2000 (25.02.00) 25 February 1999 (25.02.99) **Applicant** WU, Xiaosong et al 1. The designated Office is hereby notified of its election made: in the demand filed with the International Preliminary Examining Authority on: 05 September 2000 (05.09.00) in a notice effecting later election filed with the International Bureau on: 2. The election was not made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland

Authorized officer

Maria Kirchner

Telephone No.: (41-22) 338.83.38

Facsimile No.: (41-22) 740.14.35

PATENT COOPERATION REATY

PCT

REC'D 15	MAY 2001
MISO	PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's	or age	ent's file reference	FOR FURTHER AC	See Notif	ication of Transmittal of International				
440201/F	ry Examination Report (Form PCT/IPEA/416)								
Internationa	al appl	ication No.	International filing date (day/month/year)	Priority date (day/month/year)				
PCT/US	00/04	786	25/02/2000		25/02/1999				
	International Patent Classification (IPC) or national classification and IPC B01D67/00								
Applicant									
PALL CO	RPC	DRATION et al.							
This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.									
2. This F	REPO	RT consists of a total of	7 sheets, including this	cover sheet.					
b (\$									
3. This r	eport	contains indications rela	ting to the following iter	ns:					
1	×	Basis of the report							
11		Priority							
111			·	velty, inventive step	p and industrial applicability				
V		Lack of unity of invention Reasoned statement uncitations and explanation	nder Article 35(2) with re		ventive step or industrial applicability;				
VI		Certain documents cite	ed		·				
VII	\boxtimes	Certain defects in the in	ternational application						
VIII									
Date of sub	missio	n of the demand		Date of completion of	of this report				
05/09/20	00			10.05.2001					
	exami	g address of the international ning authority:		Authorized officer	SECOND MICHAEL				
<u>)</u>	D-80	pean Patent Office 298 Munich +49 89 2399 - 0 Tx: 523656	epmu d	Luethe, H	(Lawas St. Company)				
		+49 89 2399 - 4465	•	Telephone No. ±49 t	90 2300 7510				

EXAMINATION REPORT - SEPARATE SHEET

not in the sense detailed above.

Hence is the term 'pendant' not appropriately used in present claims 1, 7, 9, 32, 43, 46 and 50. In other words: said term is not suitable to delimit the subjectmatter of claims 1, 7, 9, 32, 43, 46 and 50 from the prior art and, as such, is unclear.

R Item V

R asoned statement under Rule 66.2(a)(ii) with regard to novelty, inventiv or industrial applicability; citations and explanations supporting such stat m nt

- Reference is made to the following documents: 1.
 - D1: US-A-4 473 474 (AMF INC.) 25 September 1984 (1984-09-25)
 - D2: US-A-4 601 828 (YALE UNIVERSITY) 22 July 1986 (1986-07-22)
 - D3: Oxford Dictionary; Oxford University Press 1998 (cf. page 1371); attached to this communication
- In so far as what can be understood from the claims (but see point VIII above): 2. The present application does not satisfy the criterion set forth in Article 33 (2) PCT because the subject-matter of claims 1-5, 29, 31, 32, 43, 46, 50, 51, 60-63, 65-71 and 74 is not new as defined in the regulations (Rule 64 (1)-(3) PCT).
- 2.1. Document D1 (for citations see the International Search Report and col. 10, line 13 to col. 11, line 31), discloses
 - a) a positively charged microporous membrane comprising a hydrophilic porous substrate and a cross linked coating having pendant cationic groups and
 - b) a process for its preparation which forms a novelty bar for the process as disclosed by present claims 32, 43, 46, 50 and 67.
 - It is clear from said process that the charge modifying agents are indeed fixed to a coating (cf. col. 10, lines 25-36).
- 2.2. Insofar the term 'pendant' can be understood (see point VIII, 1.4 above) it is clear that the term "bonded" of D1 (cf. column 10, lines 25-31) and of D2 (cf. column

EXAMINATION REPORT - SEPARATE SHEET

- 11, lines 27-34) embraces 'pendant' groups (see as well D1: column 12, lines 1-10: D2: column 12, lines 7-17).
- 2.3. The cross linked polyamides used include polyalkyleneamine and diallylamine copolymers (cf. col. 10, line 59 to col. 11, line 27; col. 21. lines 53-60). The microporous membrane of D1 is used in processes to remove the same biomolecules as exemplified in present claims 68-71 (cf. col 6, lines 8-25, col. 18, line 20 to col. 19, line 24).
- 2.4. It is an established physical principle that the same materials treated by the same process lead to the same products with identical technical properties. In accordance with this principle and taking into account the teachings of D1 and the present application one would expect the membranes as disclosed by the present application and D1 to have the same properties including the protein- and nucleic acid binding capacity (cf. present claims 29 and 74).
- 2.5. Thus, as D1 discloses all the technical features defined by the subject-matter of claim 1-5, 29, 31, 32, 43, 46, 50, 51, 60-63, 65-71 and 74 of the present application, said subject-matter is not new in respect of prior art as defined in the regulations (Rule 64(1)-(3) PCT).
- 2.6. The applicant's attention is further drawn to the fact that document D2 (cf. col. 8, line 34 to col. 9, line 25; col. 9, lines 46-51; col. 10, lines 14-37; col. 11, lines 27-58; col. 13, line 34 to col. 14, line 23; examples), independently from D1, forms a novelty bar for the subject-matter of the same claims 1-5, 29, 31, 32, 43, 46, 50, 51, 60-63, 65-71 and 74 of the present application.
- 2.7. Presently it seems that dependent claims 6-28, 30, 33-42, 44, 45, 47-49, 53-59, 64, 72 and 73 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.

R Item VII

Certain defects in the international application

EXAMINATION REPORT - SEPARATE SHEET

- 1. The amendments filed with the International Bureau under Article 19(1) introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 19(2) PCT. The amendment concerned is the following: "or absorb" (claim 67).
- Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art 2. disclosed in the documents D1 and D2 is not mentioned in the description, nor is this document identified therein.

Α,

PATENT COOPERATION TREATY

	From the INTERNATIONAL BUREAU		
PCT	To:		
NOTIFICATION OF ELECTION (PCT Rule 61.2)	Assistant Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D.C.20231 ETATS-UNIS D'AMERIQUE		
Date of mailing (day/month/year)	7		
06 October 2000 (06.10.00)	in its capacity as elected Office		
International application No. PCT/US00/04786	Applicant's or agent's file reference 440201/PALL		
International filing date (day/month/year)	Priority date (day/month/year)		
25 February 2000 (25.02.00)	25 February 1999 (25.02.99)		
Applicant			
WU, Xiaosong et al			
2. The election X was was not	er 2000 (05.09.00)		
The International Bureau of WIPO	Authorized officer		
34, chemin des Colombettes 1211 Geneva 20, Switzerland	Maria Kirchner		

Telephone No.: (41-22) 338.83.38

Facsimile No.: (41-22) 740.14.35